REMARKS

Reconsideration and allowance of the above-identified application are respectfully requested. Claims 1-14 are currently pending. Claims 1, 4-6, 8, 9, and 12 have been amended.

The undersigned notes with appreciation the Examiner's consideration of, and making of record, the documents submitted with the Information Disclosure Statement dated July 8, 2005.

Claims 1-5, 8 and 12-14 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Suzuki et al. (U.S. Patent No. 5,831,193). Prior to discussing this ground of rejection in detail, a brief summary of various aspects of the exemplary embodiments is provided below in order to highlight advantageous characteristics thereof.

As described at, for example, page 1, line 31 to page 3, line 6 of the present application, the exemplary embodiments are generally concerned with the generation of signals (e.g., single audio sample points) that fall between two known audio sample points stored in a memory. These signals are determined using interpolation techniques that operate on the surrounding audio sample points. Increasing the number of surrounding audio sample points used in the interpolation increases the accuracy of the generated audio sample, but also increases the computational power or resources required to perform the interpolation. Moreover, in synthesizers where there are a plurality of voices or channels, it is necessary to calculate audio samples for several voices or channels at once.

As described on, for example, page 4, lines 3-13 of the present application, the limits placed on the computational power of some portable devices means that they are not powerful enough to allow a synthesizer with a high number of voices and interpolation degree of around, for example, 10 to be implemented. Therefore, the exemplary embodiments provide a solution whereby the interpolation degree (e.g., the number of single audio sample points used in the interpolation) depends on the number of voices or channels that are active at that time. In this way, computational complexity and accuracy can be balanced.

To further clarify the claims, amendments have been made to replace the phrase "stored samples" with "stored single audio sample points", and the phrase "output sample" with "output signal". Support for these amendments can, for example, be found on page 6, lines 17-18 of the present application.

Suzuki et al. disclose (in the Abstract) a device in which the number of waveform samples per unit time, i.e., the waveform sampling resolution, is variably set depending on characteristics of a tone to be generated, such as construction of harmonic components in the tone. The number can be increased for a tone or portion of a tone containing a relatively high number of high-order harmonic components and decreased for a tone having a relatively low number of high-order harmonic components.

In its attempt to correlate the disclosure of Suzuki et al. with the claimed combinations, the Official Action refers to the passage in column 17, lines 61-66 of Suzuki et al. in which it is stated that "the waveform sample forming resolution of each channel after a predetermined place in the calculating order is lowered by "1" ... so as to reduce the number of samples to be actually formed". It appears to the undersigned, from the argumentation set forth in the Official Action, that the "waveform sample forming resolution" is being alleged to correspond to the interpolation degree set forth in independent claim 1.

However, claim 1 defines the interpolation degree to be the number of single audio sample points used in calculating an output signal, whereas the Suzuki et al. patent defines the "waveform sample forming resolution" as the number of waveform samples to be arithmetically formed per predetermined unit time (see, e.g., column 1 lines 18-22). Thus, whereas claim 1 sets forth that the number of single audio sample points used in the calculation of an output signal for an active voice is dependent on the number of active voices, by way of contrast the Suzuki et al. patent provides that the number of waveform samples to be arithmetically formed per predetermined unit time on one or more of the channels is dependent on the total calculation amount. These two things are not the same.

In other words, the Suzuki et al. patent changes the number of output signals to be formed per unit time, but does not change the number of single audio sample points

used in calculating an output signal, as set forth, among other features, in Applicants' independent claim 1. Accordingly, it is respectfully submitted that claim 1 is not anticipated by the Suzuki et al. patent. Similar comments apply to independent claims 9 and 12.

Claims 6 and 7 stand rejected under 35 U.S.C. §103(b) as allegedly being unpatentable in view of Suzuki et al. and Wang (U.S. Patent No. 5,814,750). Claims 9-11 stand rejected under 35 U.S.C. §103(b) as allegedly being unpatentable in view of Suzuki et al. and Boudet et al. (U.S. Patent Publication No. 2001/0045155 A1). However neither Wang, nor Boudet et al., remedy the deficiencies described above with respect to Suzuki et al and the independent claims. Accordingly, it is respectfully submitted that no combination of Suzuki et al., Wang and/or Boudet et al. would have motivated one of ordinary skill in the art to have arrived at Applicants' claim 6, 7 and 9-11 combinations.

All of the objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that this application is in condition for allowance and a notice to that effect is earnestly solicited. Should the Examiner have any questions regarding this response, or the application in general, she or he is urged to contact the undersigned at (540)-361-1863.

Respectfully submitted,

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